

6509016

Figure 1

M K L P V R L L V L M F W I P A
ATG AAG TTG CCT GTT AGG CTG TTG GTG CTG ATG TTC TGG ATT CCT GCT
S S D
TCC AGC GAT (-1 to -19, leader)

D V L M T Q T P L S L P V S L G
GAT GTT TTG ATG ACC CAA ACT CCA CTC TCC CTG CCT GTC AGT CTT GGA
D Q A S I S C
GAT CAA GCC TCC ATC TCT TGC (1-23, Frame work 1)

R S S Q S I V H S N G N T Y L E
AGA TCT AGT CAG AGC ATT GTA CAT AGT AAT GGA AAC ACC TAT TTA GAA
(24-39, CDR 1)

W Y L Q K P G Q S P N L L I Y
TGG TAC CTA CAG AAA CCA GGC CAG TCT CCA AAC CTC CTG ATC TAC
(40-54, Frame work 2)

F V S N R F S
TTT GTT TCC AAC CGA TTT TCT (55-61, CDR 2)

G V P D R F S G S G S G T D F T
GGG GTC CCA GAC AGG TTC AGT GGC AGT GGA TCA GGG ACA GAT TTC ACA
L K I S R V E A E D L G V Y Y C
CTC AAG ATC AGC AGA GTG GAG GCT GAG GAT CTG GGA GTT TAT TAC TGC
(62-93, Frame work 3)

F Q G S H V P W T
TTT CAA GGT TCA CAT GTT CCG TGG ACG
(94-102, CDR 3)

F G G G T K L E I K
TTC GGT GGA GGC ACC AAG CTG GAA ATC AAA
(103-112, Frame work 4)

R A D A A P T V S I F P P
CGG GCT GAT GCT GCA CCA ACT GTA TCC ATC TTC CCA CCA

S S K L G
TCC AGT AAG CTT GGG (Constant region)

Figure 2

M A V L G L L F C L V T F P S C
ATG GCT GTC TTG GGG CTG CTC TTC TGC CTG GTG ACA TTC CCA AGC TGT
V L S
GTC CTG TCC (-1 to -19, Leader)

Q V Q V K E S G P F L V P P S Q
CAG GTG CAG GTG AAG GAG TCA GGA CCT TTC CTG GTG CCC CCC TCA CAG
S L S I T C T V S G F S L T
AGC CTG TCC ATC ACA TGC ACT GTC TCA GGG TTC TCA TTA ACC
(1-30, Frame work 1)

T Y G V S
ACC TAT GGT GTA AGC (31-35, CDR 1)

W I R Q P P G K G L E W L G
TGG ATT CGC CAG CCT CCA GGA AAG GGT CTG GAG TGG CTG GGA
(36-49, Frame work 2)

A I W G D G T T N Y H S A L I S
GCA ATT TGG GGT GAC GGG ACC ACA AAT TAT CAT TCA GCT CTC ATA TCC
(50-65, CDR 2)

R L S I S K D N S K S Q V F L K
AGA CTG AGC ATC AGC AAG GAT AAC TCC AAG AGC CAA GTT TTC TTA AAA
L N S L Q T D D T A T Y Y C A K
CTG AAC AGT CTG CAA ACT GAT GAC ACG GCC ACG TAC TAC TGT GCC AAA
(66-97, Frame work 3)

L G N Y D A L D Y
CTG GGT AAC TAC GAT GCT CTG GAC TAC
(98-106, CDR 3)

W G Q G T S V T V S S
TGG GGT CAA GGA ACC TCA GTC ACC GTC TCC TCA
(107-117, Frame work 4)

A K T T P P P V Y P L V P G S L
GCC AAA ACG ACA CCC CCA CCC GTC TAT CCA TTG GTC CCT GGA AGC TTG GG
(Constant region)

Figure 3(A)

1A7:	1	DVLHTQTPLSLPVS LGDQASISCRSSQSI VHSNGNTYLEWYLQKPGQSPNLLIYFVSNRF	60
1	1	.....K....K.....	60
2	1	.....K....K.....	60
3	1	..V.....K....K.....	60
4	1	.....K....K.....	60
5	1	.....K....K.....	60
6	1	.....K....K.....	60
7	1	.....K....K.....	60
8	1	.....X..K....K.....	60
9	5	.....S...F.....K....K.....	64
10	1	.....K....K.....	60
11	1	.....K....K.....	60
12	20	.....K....K.....	79
13	1	.....K....K....L	60
14	1	.....K....K.....	60
15	5	.....S...F.....K....K.....	64

1A7:	61	SGVPDRFSGSGSGTDFTLKISRVEAEDLGVYYCFQGSHVPWTFGGGTKLEIK	112
1	61	.....	112
2	61	.....	112
3	61	.....	112
4	61	.....	111
5	61	....X.....	112
6	61	.....Y.....	112
7	61	.....C.....	111
8	61	.....	111
9	65	.....T.....	116
10	61	.....R.....Y.....	112
11	61	.....R.....	112
12	80	.....Y...S.....	131
13	61	.....Y.....	112
14	61	.....T.....W.....Y.....	112
15	65	.....Q.....T.....	116

Figure 3(B)

1A7: 1 QVQVKESGPFLVPPSQSL SITCTVSGFSLTTYGVSWIRQPPGKLEWLGAIWGDGTTNYH 60

1	1	.G..A.....S...V.....V....S....	52
2	1	...LQ...G..A.....S..IT.V.....V....N....	60
3	20	...L....G..A.....G...N.V.....T...N.S.D.N	79
4	1	...L..T..G..A.....S...H.V.....VV..S..S...N	60
5	1	...L....G..A.....S...H.V.....V..AG.S...N	60
6	1	...L....G..A.....S...H.V.....V..AG.S...N	60
7	1	...L....G..A.....P..S...D.V.....V...G.S...N	60
8	23	...LQ...G..A.....G...N.V.....M....N.D.N	82
9	1	...L....G..A.....G...N.V.....M....N.D.N	60
10	133	...LQ...G..A.....G...N.V.....M....N.D.N	192
11	20	...L....G..A.....G...N.V.....M....N.D.N	79
12	1	...L....G..A.....SR.S.H.V.....M...G.N.D.N	60
13	21	..HL...V..A.....N...H.V.....V..AG.N...N	80
14	23	...LQ...G..A.....G...N.V.....M....N.D.N	82
15	1	...LQ...G..A.....G...N.V.....M....N.D.N	60

1A7: 61 SALISRLSISKDNSKSQVFLKLNSLQTDATYYCAKL-----GNYDALDYWGQTSVTVSS 117

1	53	.....P-----YDYExxxxx.....TL..	109
2	61	.....x-----xxxxxxx.K.....	120
3	80	.T.K...T.T.....M.....R...SVSIYYYGRSDK.FT.....	144
4	61	...K.....M.....M...Rx-----xx.D.Y.M.....	119
5	61	...M.....M.....M...Rx-----xxxxxx.Y.M.....	120
6	61	...M.....M.....M...Rx-----xxxx.Y.M.....	118
7	61	...M.....M...X...M...xx-----xxx.X.Y.M.....	119
8	83	...K.....M...H...R...RE-----=RDYR.....T....	138
9	61	...K.....M...H...R...RE-----=RDYR.....TL....	116
10	193	...K.....M...H...R...RE-----=RDYR.....T....	248
11	80	...K.....M...H...R...RE-----=RDYR.....TL....	135
12	61	...K.....M.....M...RD-----GYDx.M.....	117
13	81	...M.....M...I...I...x-----xxxxx.Y.M.....	139
14	83	...K.....M...H...R...RE-----=RDYR.....T....	138
15	61	...K.....M...H...R...RE-----=RDYR.....T....	116

Figure 3(C)

		*****	*****	
VL consensus:	1	DVLMTQTPLSLPVSLGDQASISCRSSQSI	VHSNGNTYLEWYLQKKGQSPKLLIYFVSNRF	60
1A7:	1	.....	P....N.....	60

		*	*****	
VL consensus:	61	SGVPDRFSGSGSGTDFTLKISRVEAEDLGVYYCFQGS	HPWTFGGGTKLEIK	112
1A7:	61	.....		112

		*****	*****	
VH consensus:	1	QVQLKESGPGLVAPSQSLITCTVSGFSLTSYGVHWVRQPPGKLEWLGVIWGDGSTNYN		60
1A7:	1	...V....F..P.....	T...S.I.....A....T...H	60

		*****	*****	
VH consensus:	61	SALKSRLSISKDNSKSQVFLKMNSLQDDTARYYCARExxxxYYAMDYWGQGS	VTVSS	119
1A7:	61	...I.....L.....T....KL--GN.D.L.....		117

Figure 4

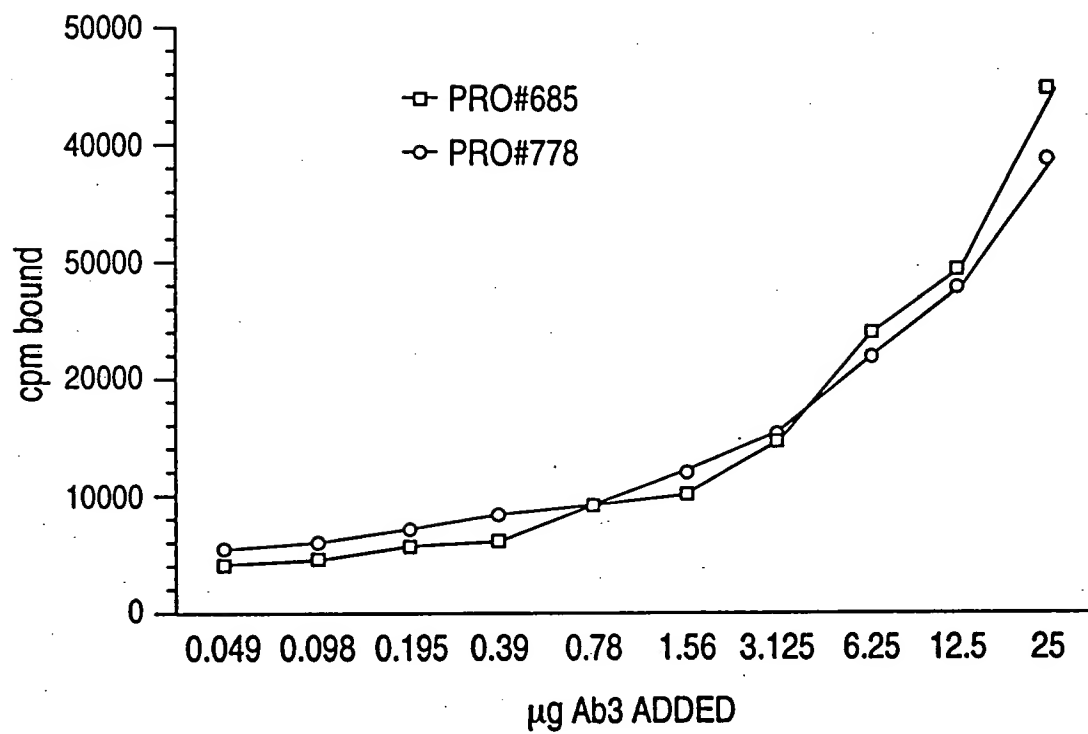


Figure 5

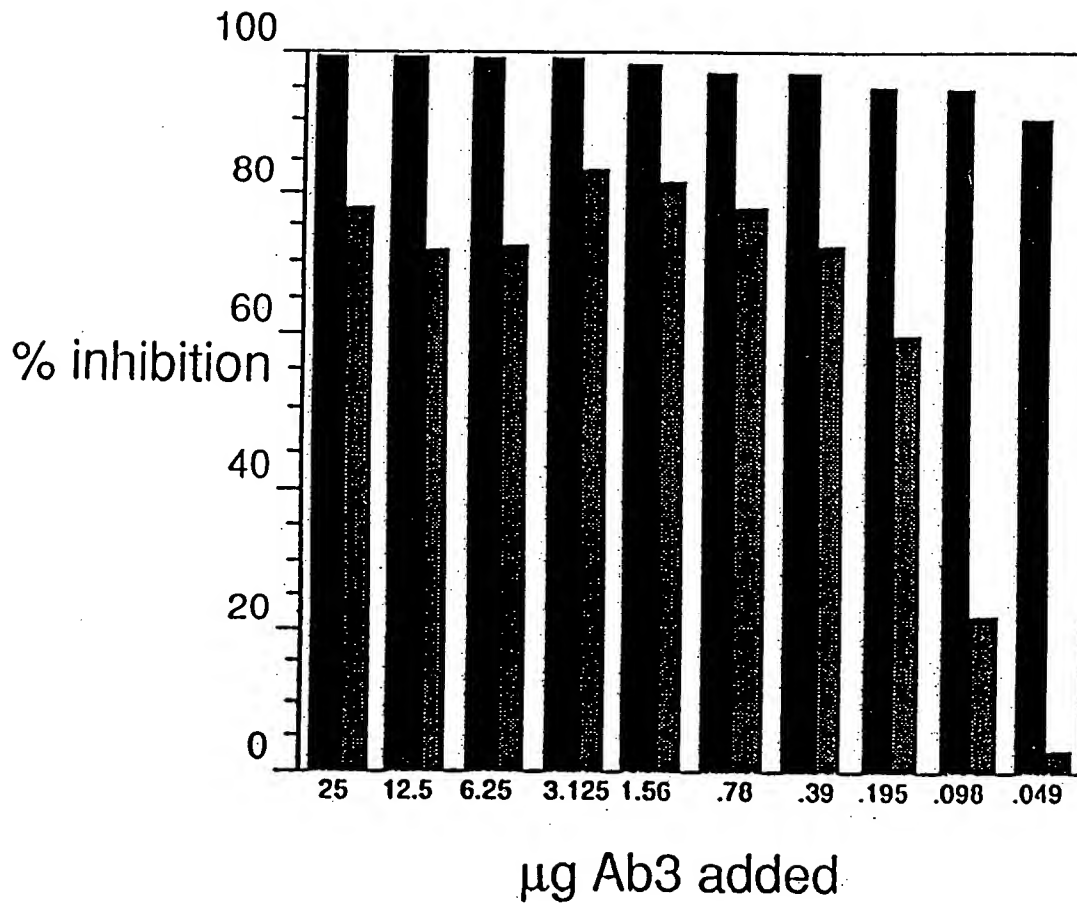


Figure 6

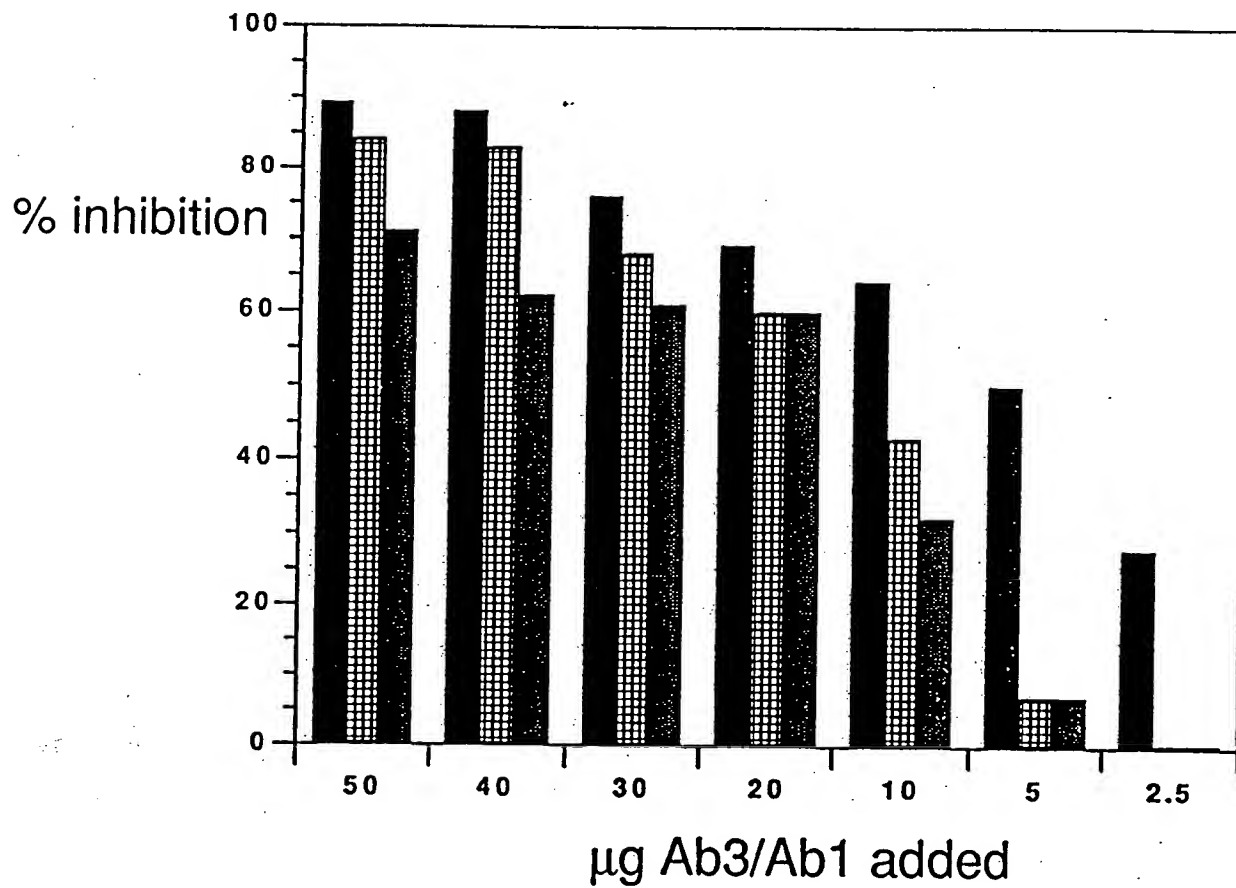


Figure 7(A)

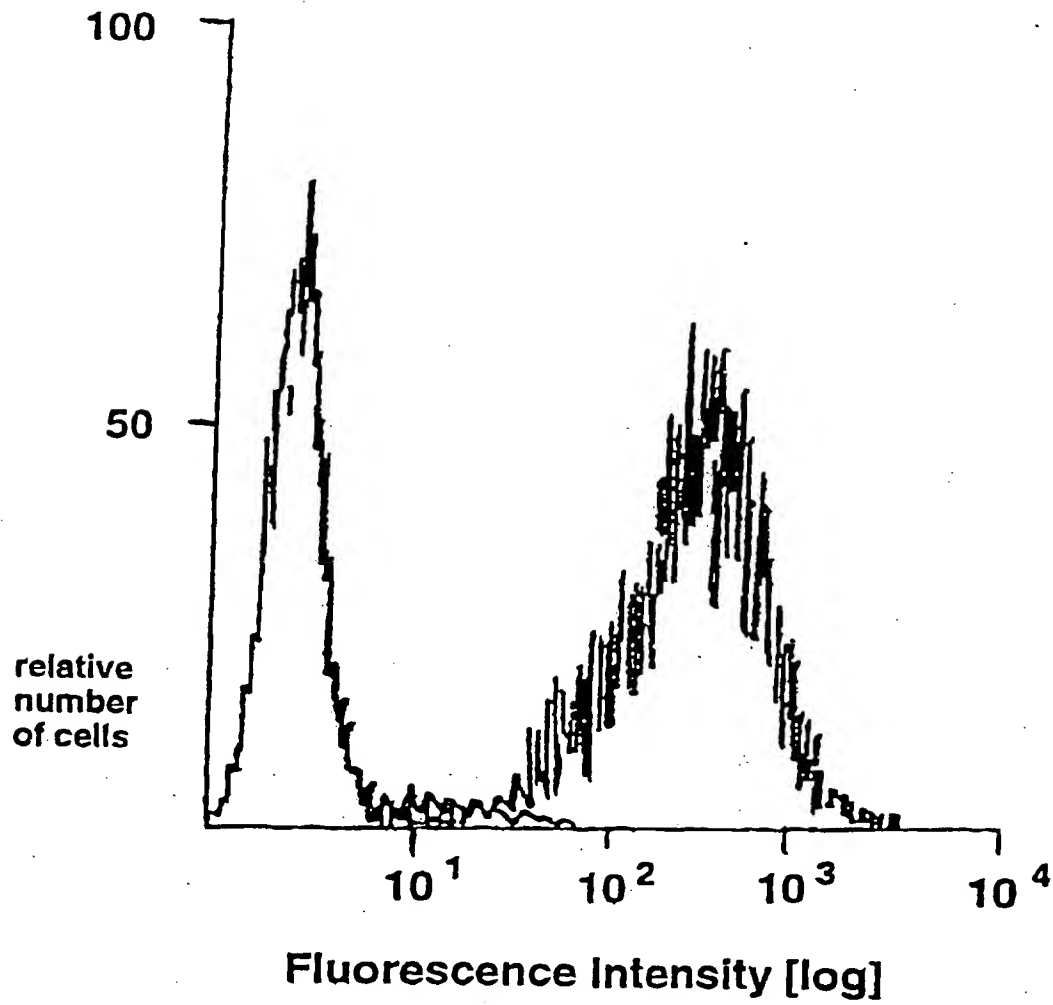


Figure 7(B)

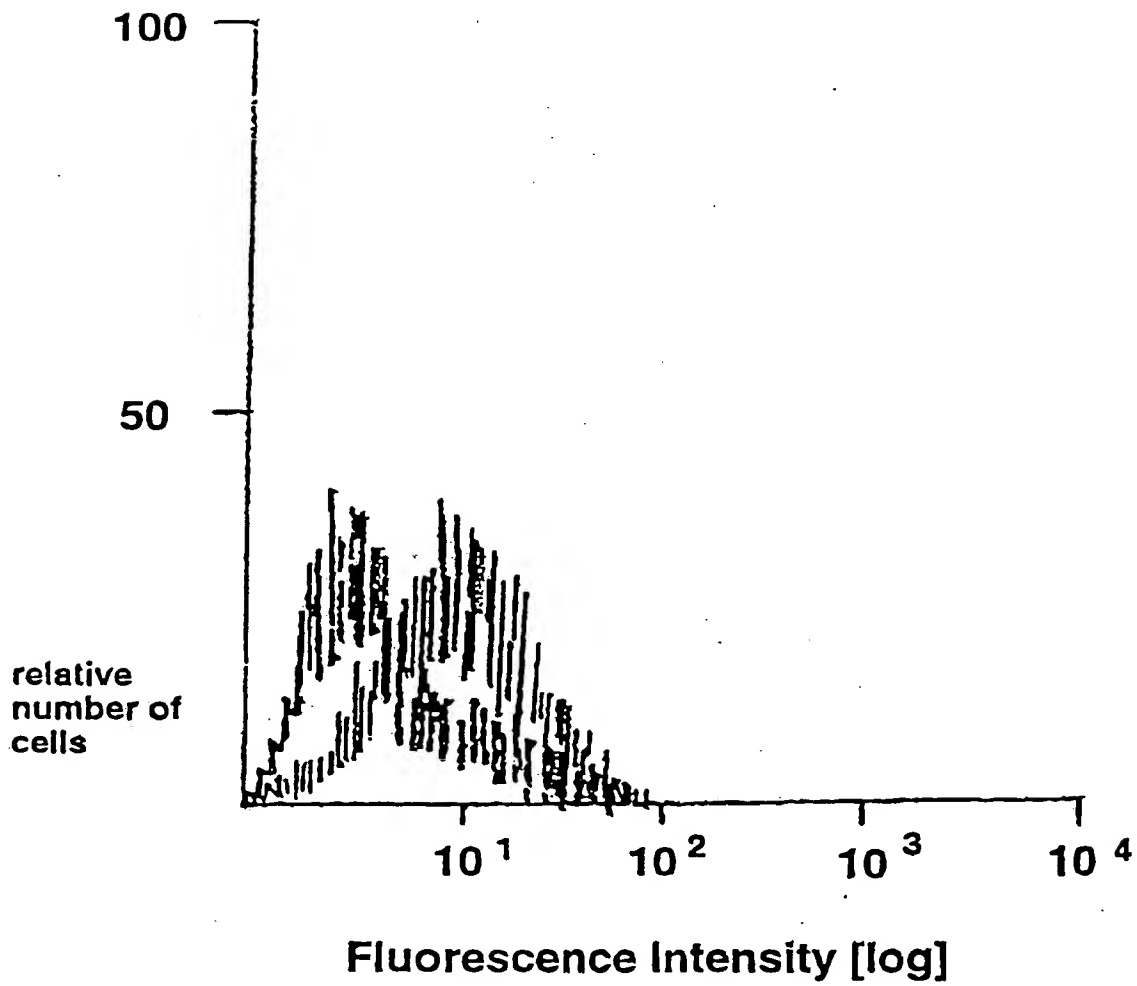


Figure 7(C)

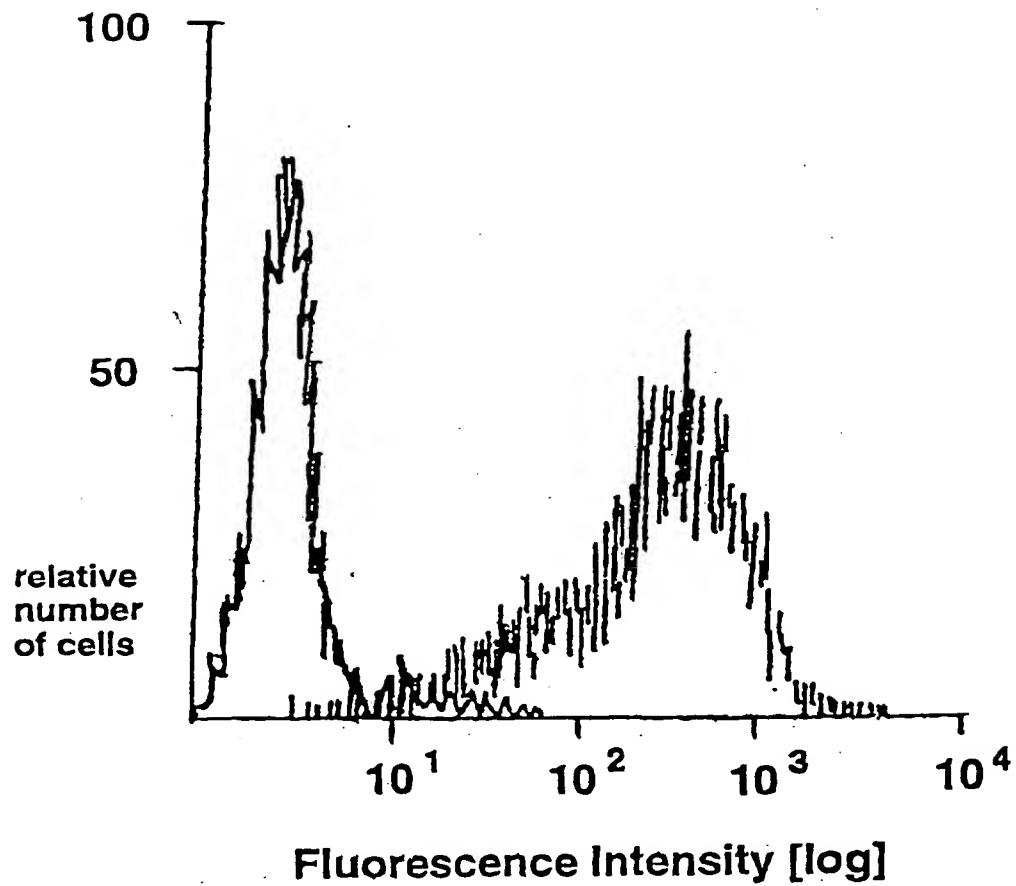


Figure 8

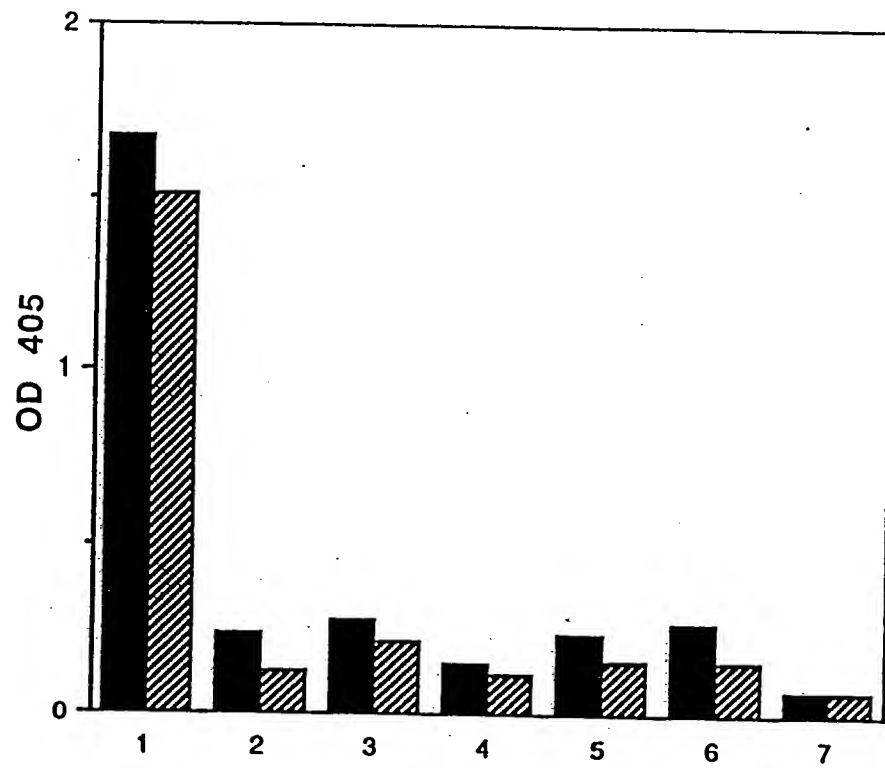


Figure 9

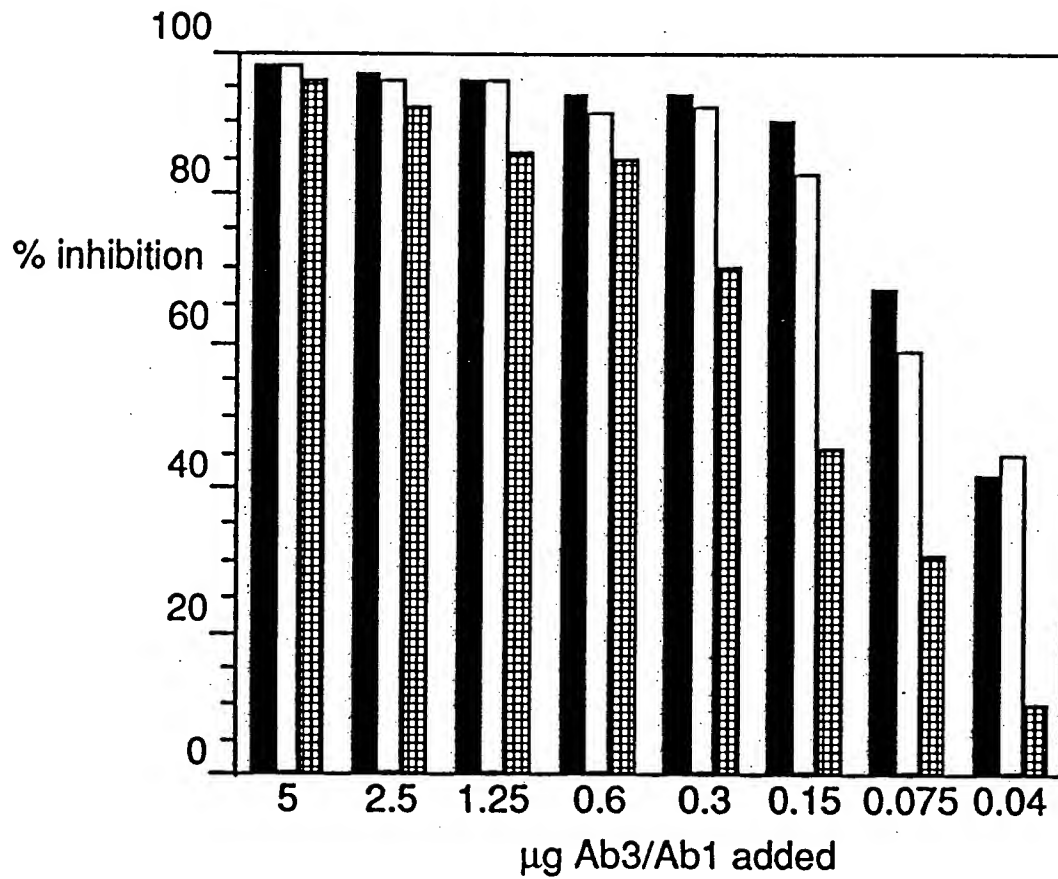


Figure 10

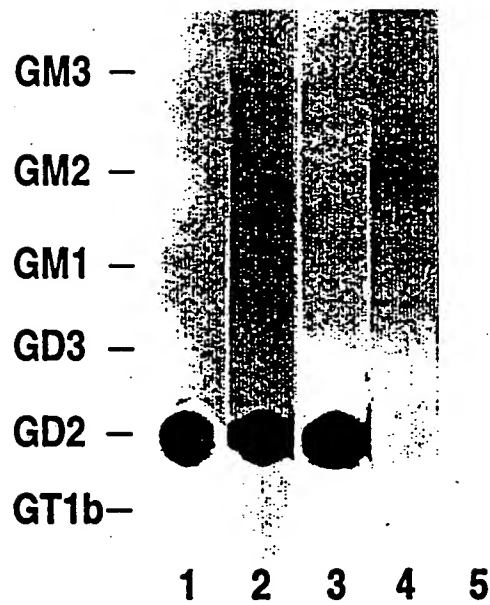


Figure 11

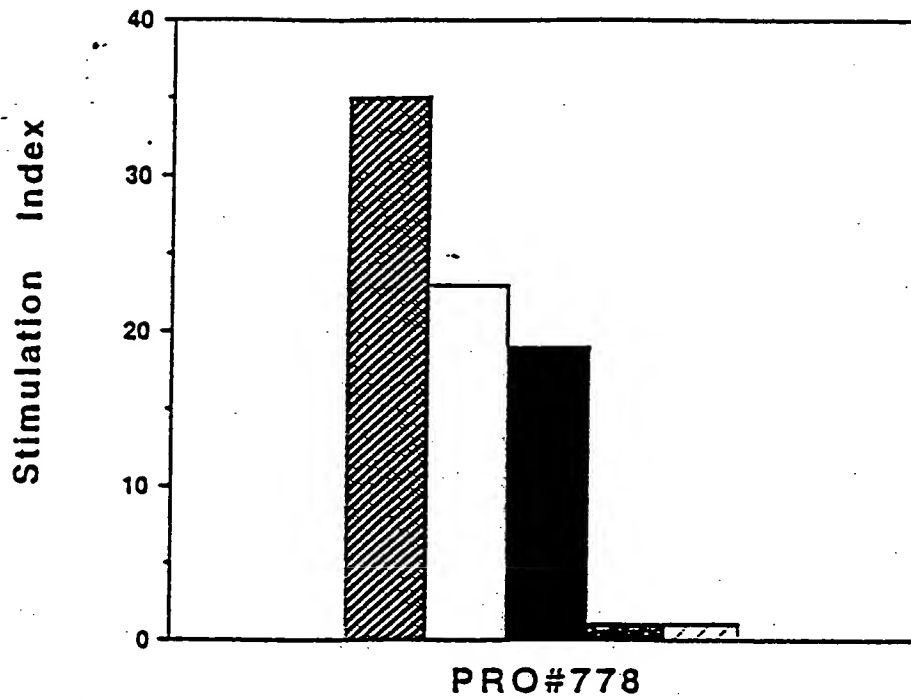


Figure 12

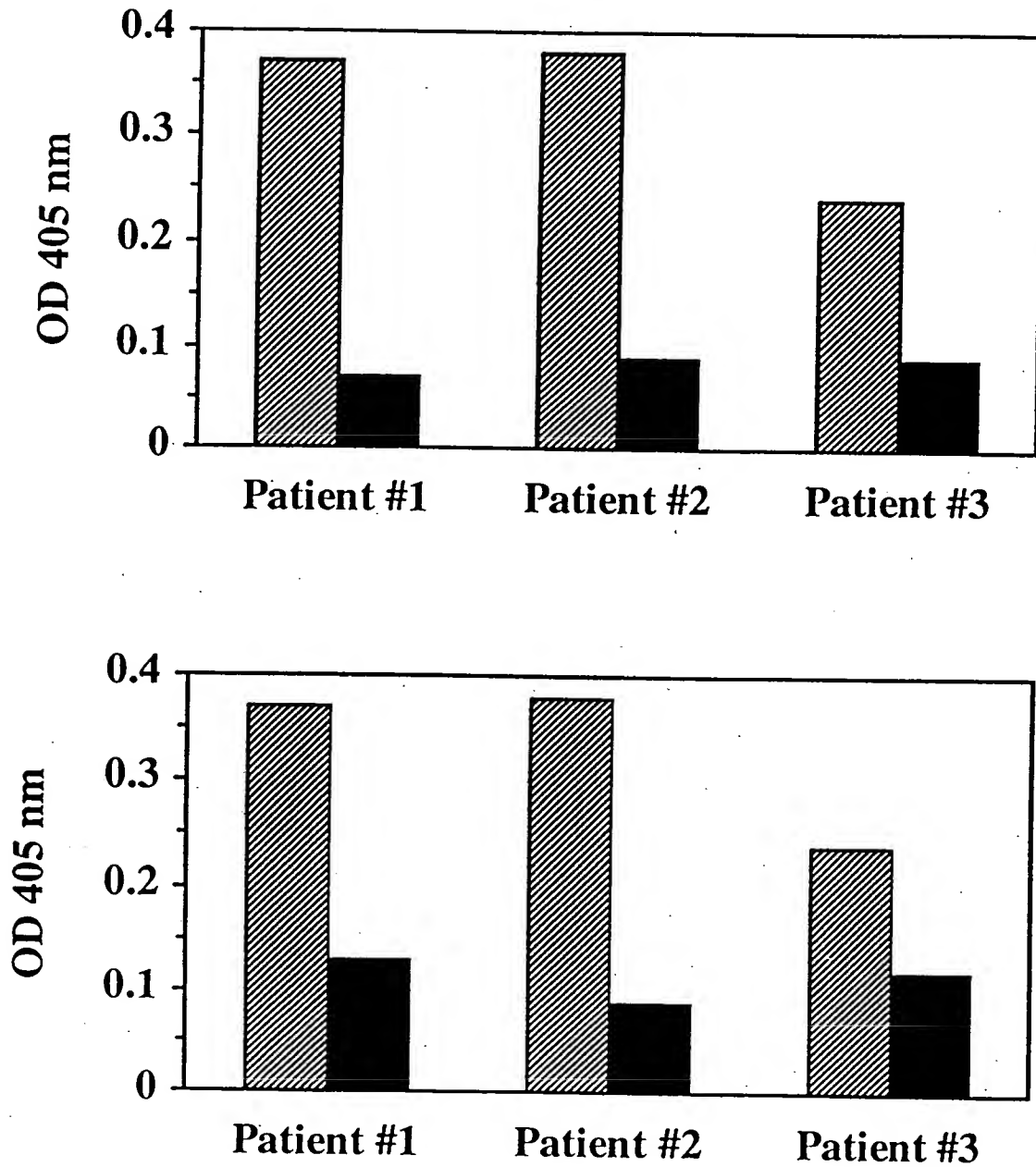


Figure 13

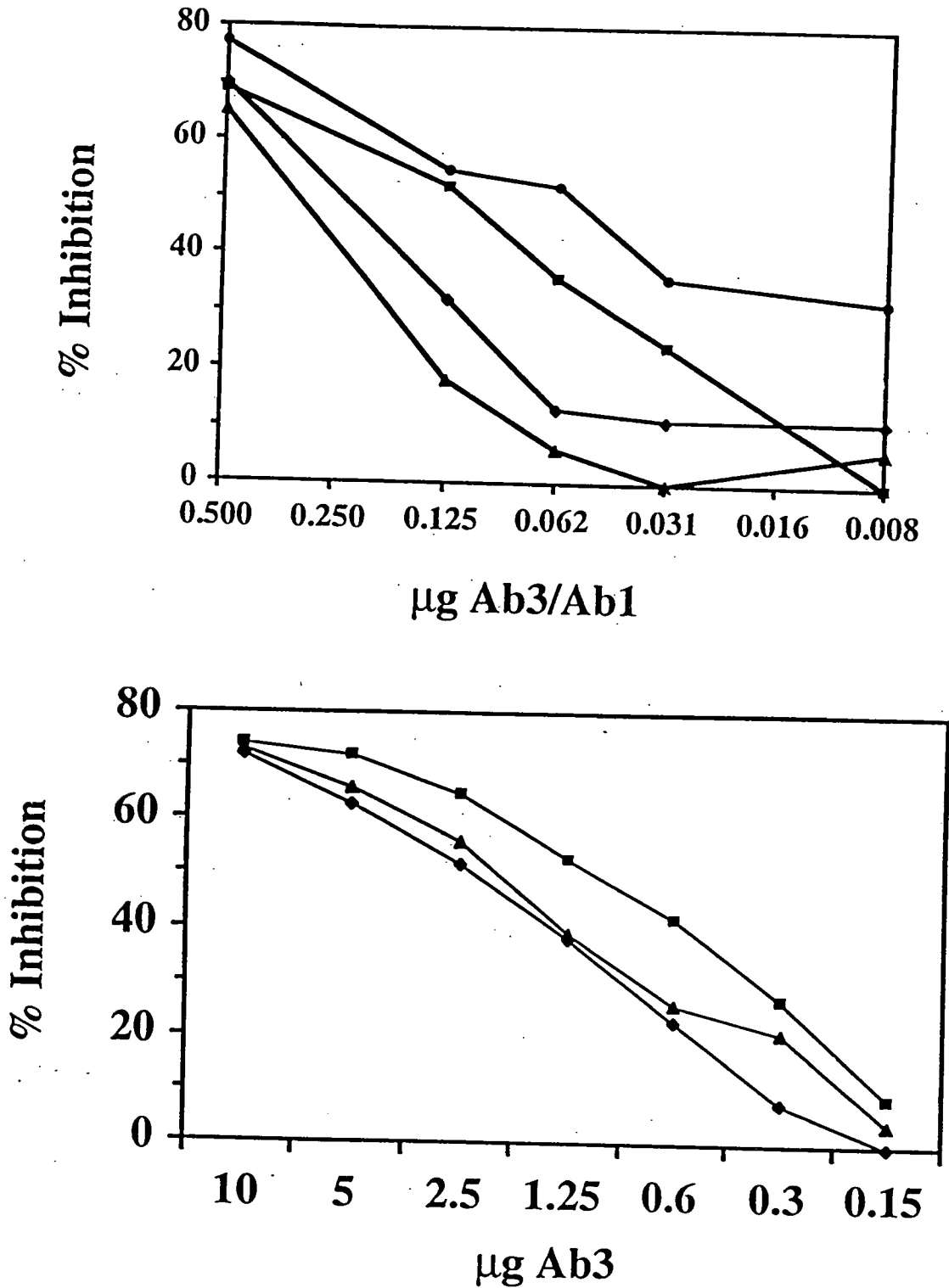


Figure 14

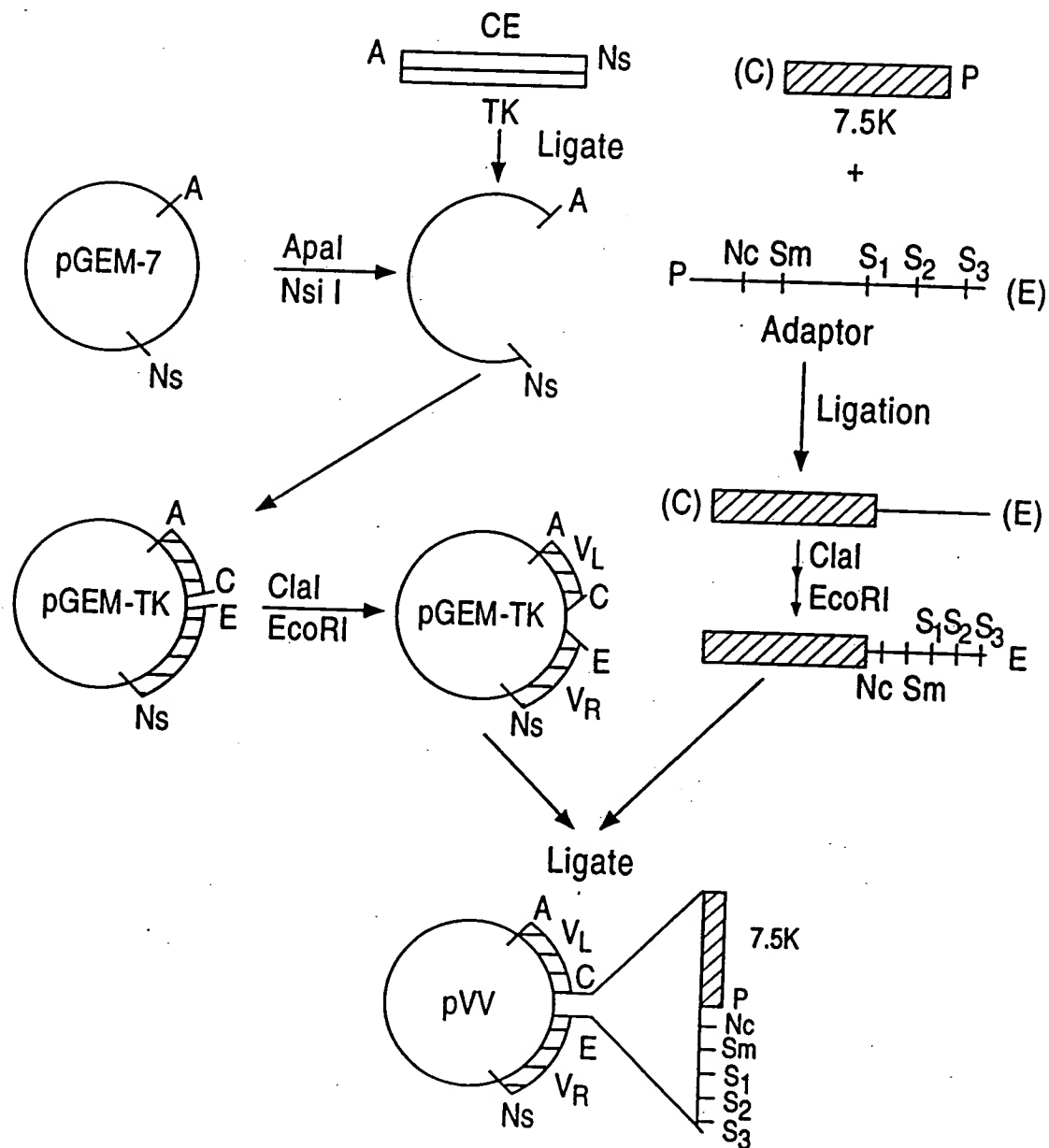


Figure 15

GCCGATATCACC!ATGGCTGTCTTGGGGCTGCTCTTCTGCCTGGTGACATTCCCAAGC
TGTGTCCTGTCCCAGGTGCAGGTGAAGGAGTCAGGACCTTTCCTGGTGCCCCCTCA
CAGAGCCTGTCCATCACATGCACTGTCTCAGGGTTCTCATTAAACCACCTATGGTGTA
AGCTGGATTGCGCCAGCCTCCAGGAAAGGGTCTGGAGTGGCTGGGAGCAATTTGGGG
TGACGGGACCACAAATTATCATTGAGCTCTCATATCCAGACTGAGCATCAGCAAGGA
TAACTCCAAGAGCCAAGTTTTCTTAAAACTGAACAGTCTGCAAACTGATGACACGGC
CACGTACTACTGTGCCAAACTGGGTAACTACGATGCTCTGGACTACTGGGGTCAAGG
AACCTCAGTCACCGTCTCCTCAGGGGGAGGTGGCTCGGGCGGTGGCGGGCTCGGGTGG
CGGCGGATCCGATGTTTTGATGACCCAACTCCACTCTCCCTGCCTGTCAGTCTTGGA
GATCAAGCCTCCATCTCTTGAGATCTAGTCAGAGCATTGTACATAGTAATGGAAAC
ACCTATTTAGAATGGTACCTACAGAAACCAGGCCAGTCTCCAAACCTCCTGATCTAC
TTTGTTCCTCAACCGATTTTCTGGGGTCCCAGACAGGTTTCAGTGGCAGTGGATCAGGG
ACAGATTTCACTCAAGATCAGCAGAGTGGAGGCTGAGGATCTGGGAGTTTATTAC
TGCTTTCAAGGTTACATGTTCCGTGGACGTTTCGGTGGAGGCACCAAGCTGGAAATC
AAATAATCTAGAGATG

1	mavlgllfcl	vtfpscvlsq	vqvkesgpfl	vppsqsitsit	ctvsgfsltt
51	ygvswirqpp	gkglewlgai	wgdgttnyhs	alisrlsisk	dnsksqvflk
101	lnslqtddda	tyycaklgny	daldywgqgt	svtvssgggg	sgggsgggg
151	sdvlmtqtpl	slpvslgdqa	siscrssqsi	vhsngntyle	wylqkpgqsp
201	nlliyfvsnr	fsgvpdrfsg	sgsgtdflk	isrveadlg	vyycfqgshv
251	pwtfgggtkl	eik			

Figure 16

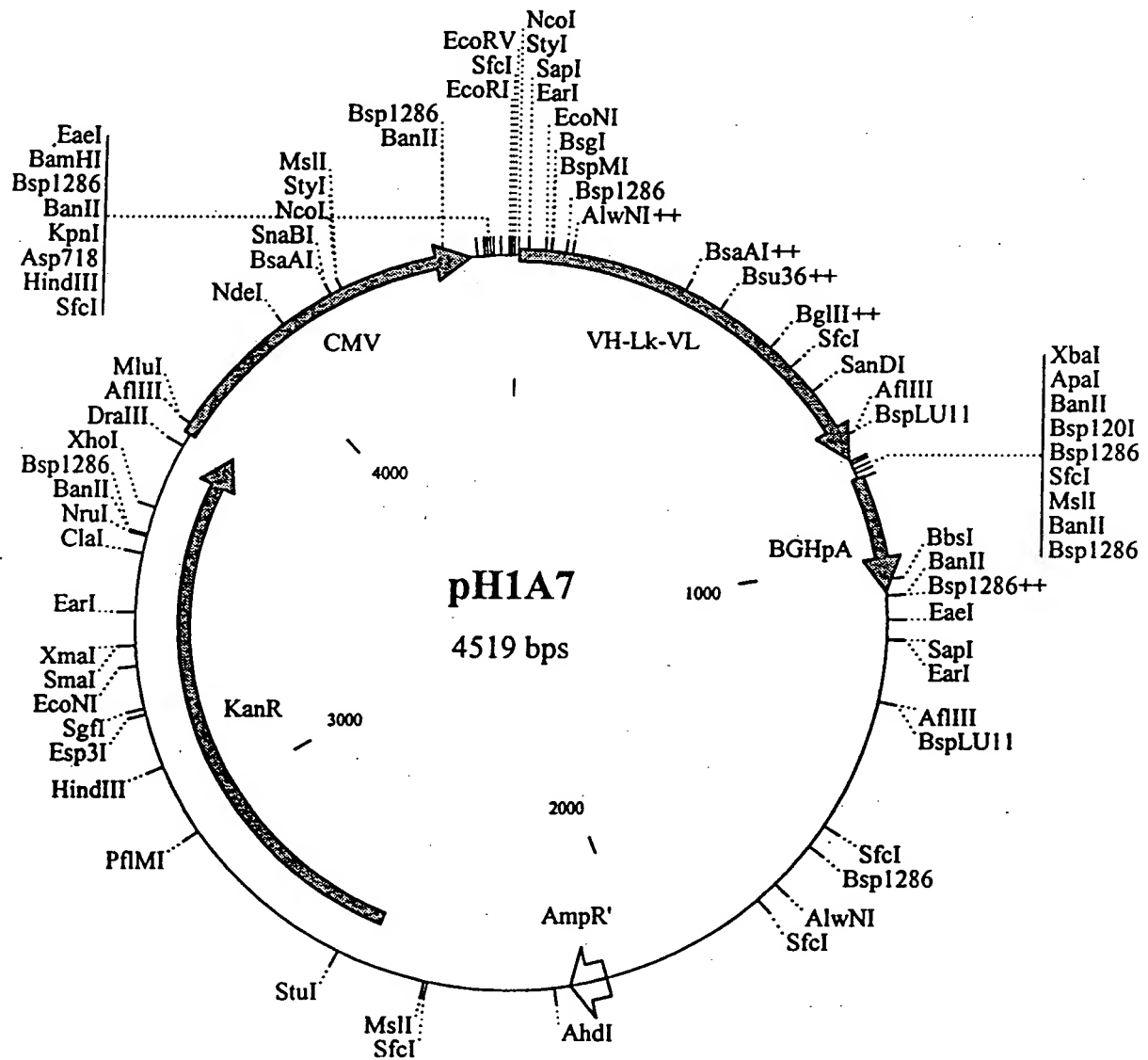


Figure 17(A)

>gb|L22327|MUSIGKAVAA House rearranged immunoglobulin kappa-chain mRNA V-J

```
1 GATGTTTTGATGACCCAACTCCACTCTCCCTGCCTGTCAGTCTTGGAGATCAAGCCTCC 60
61 ATCTCTTGCAGATCTAGTCAGAGCATTGTACATAGTAATGGAAACACCTATTTAGAATGG 120
121 TACCTGCAGAAACCAGGCCAGTCTCCAAAGCTCCTGATCTACAAAGTTTCCAACCGATTT 180
181 TCTGGGGTCCCAGACAGGTTTCAGTGGCAGTGGATCAGGGACAGATTTCACTCAAGATC 240
241 AGCAGAGTGGAGGCTGAGGATCTGGGAGTTTATTACTGCTTTCAAGGTTACATGTTCCG 300
301 TGGACGTTCCGGTGGAGGCACCAAGCTGGAAATCAAA 336
```

>gb|L18941|MUSIG4388 House rearranged immunoglobulin light chain Ab438 mRNA V-J

```
1 GATGTTTTGATGACCCAACTCCACTCTCCCTGCCTGTCAGTCTTGGAGATCAAGCCTCC 60
61 ATCTCTTGCAGATCTAGTCAGAGCATTGTACATAGTAATGGAAACACCTATTTAGAATGG 120
121 TACCTGCAGAAACCAGGCCAGTCTCCAAAGCTCCTGATCTACAAAGTTTCCAACCGATTT 180
181 TCTGGGGTCCCAGACAGGTTTCAGTGGCAGTGGATCAGGGACAGATTTCACTCAAGATC 240
241 AGCAGAGTGGAGGCTGAGGATCTGGGAGTTTATTACTGCTTTCAAGGTTACATGTTCCG 300
301 TGGACGTTCCGGTGGAGGCACCAAGCTGGAAATCAAA 336
```

>gb|M34588|MUSIGKABR House Ig kappa-chain mRNA V-J region, partial cds.

```
1 GATGTTTTGATGACCCAACTCCACTCTCCCTNCCTGTCAGTCTTGGAGATCAAGCCTCC 60
61 ATCTCTTGCAGATCTAGTCAGAGCATTGTACATAGTAATGGAAACACCTATTTAGAATGG 120
121 TACCTGCAGAAACCAGGCCAGTCTCCAAAGCTCCTNATCTACAAAGTTTCCAACCGATTT 180
181 TCTGGGGTCCCAGACAGGTTTCAGTGGCAGTGGATCAGGGACAGATTTCACTCAAGATC 240
241 AGCAGAGTGGAGGCTGAGGATCTGGGAGTTTATTACTGCTTTCAAGGTTACATGTTCCG 300
301 TGGACGTTCCGGTGGAGGCACCAAGCTGGAAATCAAA 336
```

>gb|M32857|MUSIGKCSP Mouse Ig rearranged kappa-chain mRNA V-region, partial

```
1 GATGTTTTGATGACCCAACTCCACTCTCCCTGCCTGTCAGTCTTGGAGATCAAGCCTCC 60
61 ATCTCTTGCAGATCTAGTCAGAGCATTGTACATAGTAATGGAAACACCTATTTAGAATGG 120
121 TACCTGCAGAAACCAGGCCAGTCTCCAAAGCTCCTGATCTACAAAGTTTCCAACCGATTT 180
181 TCTGGGGTCCCAGACAGGTTTCAGTGGCAGTGGATCAGGGACAGATTTCACTCAAGATC 240
241 AGCAGAGTGGAGGCTGAGGATCTGGGAGTTTATTACTGCTTTCAAGGTTACATGTTCCG 300
301 TGGACGTTCCGGTGGAGGCACCAAGCTGGAAATC 333
```

>gb|M83723|MUSIGKD2A Mouse monoclonal antiidiotypic antibody Ig kappa light

```
1 GATGTTTTGATGACCCAACTCCACTCTCCCTGCCTGTCAGTCTTGGAGATCAAGCCTCC 60
61 ATCTCTTGCAGATCTAGTCAGAGCATTGTACATAGTAATGGAAACACCTATTTAGAATGG 120
121 TACCTGCAGAAACCAGGCCAGTCTCCAAAGCTCCTGATCTACAAAGTTTCCAACCGATTT 180
181 TCTGGGGTCCCAGACAGGTTTCAGTGGCAGTGGATCAGGGACAGATTTCACTCAAGATC 240
241 AGCAGAGTGGAGGCTGAGGATCTGGGAGTTTATTACTGCTTTCAAGGTTACATGTTCCG 300
301 CGGACGTTCCGGTGGAGGCACCAAGCTGGAAATCAAA 336
```

>emb|Z22035|MDIGKVAH M.domesticus IgK variable region.

```
1 GATGTTGTGATGACCCAACTCCACTCTCCCTGCCTGTCAGTCTTGGAGATCAAGCCTCC 60
61 ATCTCTTGCAGATCTAGTCAGAGCATTGTACATAGTAATGGAAACACCTATTTAGAATGG 120
121 TACCTGCAGAAAGCCAGGCCAGTCTCCAAAGCTCCTGATCTACAAAGTTTCCAACCGATTT 180
181 TCTGGGGTCCCAGACAGGTTTCAGTGGCAGTGGATCAGGGACAGATTTCACTCAAGATC 240
241 AGCAGAGTGGAGGCTGAGGATCTGGGAGTTTATTACTGCTTTCAAGGTTACATGTTCCG 300
301 TGGACGTTCCGGTGGAGGCACCAAGCTGGAAATCAAA 336
```

Figure 17(B)

>gb|H34589|MUSIGKABS House Ig kappa-chain mRNA V-J region, partial cds.

```
1 GATGTTTTGATGACHCAAACCTCCACTCTCCCTGCCTGTCAGTCTTGGAGATCAAGCCTCC 60
61 ATCTCTTGCAGATCTAGTCAGAGCATTGTACATAGTAATGGAAACACCTATTTAGAATGG 120
121 TACCTGCAGAAACCAGGCCAGTCTCCAAAGCTCCTHATCTACAAAGTTTCCAACCGATTT 180
181 TCTGGGGTCCCAGAHAGGTTTCAGTGGCAGTGGATCAGGGACAGATTTCACTCAAGATC 240
241 AGCAGAGTGGAGGCTGAGGATCTGGGAGTTTATTACTGCTTTCAAGGTTACATGTTCCG 300
301 TGGACGTTCCGGTGGAGGCACCAAGCTGGAAATCAAA 336
```

>gb|H32858|MUSIGKCSQ House Ig rearranged kappa-chain mRNA V-region, partial

```
1 GATGTTTTGATGACCCAAACCTCCACTCTCCCTGCCTGTCAGTCTTGGAGATCAAGCCTCC 60
61 ATCTCTTGCAGATCTAGTCAGAGCATTGTACATAGTAATGGAAACACCTATTTAGAATGG 120
121 TACCTGCAGAAACCAGGCCNGTCTCCAAAGCTCCTGATCTACAAAGTTTCCAACCGATTT 180
181 TCTGGGGTCCCAGACAGGTTTCAGTGGCAGTGGATCAGGGACAGATTTCACTCAAGATC 240
241 AGCAGAGTGGAGGCTGAGGATCTGGGAGTTTATTACTGCTTTCAAGGTTACATGTTCCG 300
301 TGGACGTTCCGGTGGAGGCACCAAGCTGGAAATC 333
```

>emb|X87231|MHKAPLI M.musculus mRNA for antibody light chain

```
89 GATGTTTTAATGACCCAAACCTCCACTCTCCCTGCCTGTCAGTCTTGGAGATCAAGCCTCC 148
149 ATCTCTTGCAGATCTAGTCAGAGCATTGTACATAGTAATGGAAACACCTATTTAGAATGG 208
209 TACCTGCAGAAACCAGGCCAGTCTCCAAAGCTCCTGATCTACAAAGTTTCCAACCGATTT 268
269 TCTGGGGTCCCAGACAGGTTTCAGTGGCAGTGGATCAGGGACAGATTTCACTCAAGATC 328
329 AGCAGAGTGGAGGCTGAGGATCTGGGAGTTTATTACTGCTTTCAAGGTTACATGTTCCG 388
389 TGGACGTTCCGGTGGAGGCACCAAGCTGGAAATCAAA 424
```

>gb|U29428|MMU29428 Mus musculus anti-PC rearranged Ig kappa chain V-J region

```
13 GATGTTTTGATGACCCAAACCTCCACTCTCCCTGCCTGTCAGTCTTGGAGATCAAGCCTCC 72
73 ATCTCTTGCAGATCTAGTCAGAGCATTGTACATAGTAGTGGAAACACCTTTTTAGAATGG 132
133 TACCTGCAGAAACCAGGCCAGTCTCCAAAGCTCCTGATCTACAAAGTTTCCAACCGATTT 192
193 TCTGGGGTCCCAGACAGGTTTCAGTGGCAGTGGATCAGGGACAGATTTCACTCAAGATC 252
253 AGCAGGGTGGAGGCTGAGGATCTGGGAGTTTATTACTGCTTTCAAGGTACACATGTTCCG 312
313 TGGACGTTCCGGTGGAGGCACCAAGCTGGAAATCAAA 348
```

Figure 18(A)

>gb|U01185|MMU01185 *Mus musculus* BALB/c anti-glycophorin A type N

```

1 CAGGTGCAGCTGCAGGAGTCAGGACCTGGCCTGGTGGCGCCCTCACAGAGCCTGTCCATC 60
61 ACATGCACTGTCTCAGGGTTCTCATTAAACCAGCTATGGTATAACCTGGGTTCCGCCAGCCT 120
121 CCAGGAAAGGGTCTGGAGTGGCTGGGAGTAATATGGGGTGACGGAAACACAAATTATCAT 180
181 TCAGCTCTCATATCCAGACTGAGCATCAGCAAGGATAACTCCAAGAGCCAAGTTTTCTTA 240
241 AAAGTGAACAGTCTGCAAACCTGATGACACAGCCACGTACTACTGTGCCAAA 291
292 ----- 315
316 GCTAAGGACTACTGGGGTCAAGGAACCTCAGTCACCGTCTCCTCA 360

```

>gb|M26985|MUSIGH1PR *Mus musculus* productively rearranged IgH chain allele 1,

```

1 CAGGTGCAGCTGAAGGAGACAGGACCTGGCCTGGTGGCGCCCTCACAGAGCCTGTCCATC 60
61 ACATGCACCGTCTCAGGGTTCTCATTAAACCAGCTATGGTGTACACTGGGTTCCGCCAGCCT 120
121 CCAGGAAAGGGTCTGGAGTGGCTGGTAGTGATATGGAGTGATGGAAGCACAACTATAAT 180
181 TCAGCTCTCAAATCCAGACTGAGCATCAGCAAGGACAACTCCAAGAGCCAAGTTTTCTTA 240
241 AAAATGAACAGTCTCCAAACCTGATGACACAGCCATGTACTACTGTGCCAGAC 292
293 ----- 300
301 GGTGACTACTATGCTATGGACTACTGGGGTCAAGGAACCTCAGTCACCGTCTCCTCA 357

```

>dbj|D17387|PVYIB Potato virus Y immunoglobulin gene for monoclonal antibody

```

58 CAGGTGCAGCTGAAGGAGTCAGGACCTGGCCTGGTGGCGCCCTCACAGAGCCTGTCCATC 117
118 ACATGCACTGTCTCAGGGTTCTCATTAAACCAGCTATGGTGTAAAGCTGGGTTCCGCCAGCCT 177
178 CCAGGAAAGGGTCTGGAGTGGCTGGGAGTAATATGGGGTGACGGGAGCACAAATTATCAT 237
238 TCAGCTCTCATATCCAGACTGAGCATCAGCAAGGATAACTCCAAGAGCCAAGTTTTCTTA 297
298 AAAGTGAACAGTCTGCAAACCTGATGACACAGCCACGTACTACTGTGCCAAGCATCTTGAC 357
358 TAC 360
361 TGGGGCCAAGGCACCACTCTCACAGTCTCCTCA 393

```

>gb|M36228|MUSIGHAEI *Mouse* Ig heavy-chain mRNA V region, partial cds from

```

1 CAGGTGCAGCTGAAGGAGTCAGGACCTGGCCTGGTGGCGCCCTCACAGAGCCTGTCCATC 60
61 ACTTGCACTGTCTCTGGGTTTTTCATTAAACCAGCTATGGTGTACACTGGGTTCCGCCAGCCT 120
121 CCAGGAAAGGGTCTGGAGTGGCTGGGAGTAATATGGGGTGGTGGGAAGCACAAATTATAAT 180
181 TCGGCTCTCATGTCCAGACTGAGCATCAGCAAAGACAACTCCAAGAGCCAAGTTTTCTTA 240
241 AAAATGAACAGTCTGCAAACCTGATGACACAGCCATGTACTACTGTGCCAGAGGGCATTAC 300
301 TACG 304
305 - 305
306 CTACTATGCTATGGACTACTGGGGTCAAGGAACCTCAGTCACCGTCTCC 354

```

>gb|L48671|MUSAB *Mus musculus* (cell line C3H/F2-22) chromosome 12 anti-DNA

```

1 CAGGTGCAGCTCAAGGAGTCAGGACCTGTCTCGTGGCGCCCTCACAGAGCCTGTCCATC 60
61 ACTTGCACTGTCTCTGGGTTTTTCATTAAACCAGCTATGGTGTACACTGGGTTCCGCCAGCCT 120
121 CCAGGCAAGGGTCTGGAGTGGCTGGGAGTAATATGGGGTGGTGGGAAGCACAAATTATAAT 180
181 TCAGCTCTCATGTCCAGACTGAGCATCAGCAAAGACAACTCCAAGAGCCAAGTTTTCTTA 240
241 AAAATGAACAGTCTGCAAACCTGATGACACAGCCATGTACTACTGTGCCAAAC 292
293 ----- 304
305 ACAATGCTATGGACTACTGGGGTCAAGGAACCTCAGTCACNGTCTCCTCA 354

```

Figure 18(B)

>emb|X75099|MHASWS1H M.musculus (A.SW) mRNA for ASWS1 antibody heavy chain

```
1 CAGGTNCAGCTGAAGGAGTCAGGACCTGGCCTGGTGGCACCCCTCACAGAGCCTGTCCATC 60
61 ACATGCACTGTCTCTGGGTTCTCATTATCCAGATATAGTGTACACTGGGTTCCGCCAGCCT 120
121 CCAGGAAAGGGTCTTGAGTGGCTGGGAATGATATGGGGTGGTGGAAACACAGACTATAAT 180
181 TCAGCTCTCAAATCCAGACTGAGCATCAGCAAGGACAACCTCCAAGAGCCAAGTTTTCTTA 240
241 AAAATGAACAGTCTGCAAACCTGATGACACAGCCATGTACTACTGTGCCAGAGATGGTTAC 300
301 TACGACTATGCTATGGACTACTGGGGTCAAGGAACCTCAGTCACCGTCTCC 351
```

>gb|M36217|MUSIGHADX Mouse Ig heavy-chain mRNA V region, partial cds.

```
1 CAGGTGCAGCTGAAGGAGTCAGGACCTGGCCTGGTGGCGCCCTCACAGAGCCTGTCCATC 60
61 ACTTGCACTGTCTCTGGGTTTTTCATTAAACCAGCTATGGTGTACACTGGGTTCCGCCAGCCT 120
121 CCAGGAAAGGGTCTGGAGTGGCTGGGAGTAATATGGGGTGGTGGAAAGCACAATTATAAT 180
181 TCGGCTCTCATGTCCAGACTGAGCATCAGCAAAGACAACCTCCAAGAGCCAAGTTTTCTTA 240
241 AAAATGAACAGTCTGCAAACCTGATGACACAGCCATGTACTACTGTGCCAGA 291
292 ----- 312
313 TACTATGCTATGGACTACTGGGGTCAAGGAACCTCAGTCACCGTCTCC 360
```

>gb|J04609|MUSIGMAF Mus musculus IgM chain (anti-fluorescein antibody 18-2-3)

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67 CACGTGCACCTGAAGGAGTCAGGACCTGTCCTGGTGGCGCCCTCACAGAGCCTGTCCATC 126
127 ACTTGCACTGTCTCTGGGTTTTTCATTAAACCAACTATGGTGTACACTGGGTTCCGCCAGCCT 186
187 CCAGGAAAGGGTCTGGAGTGGCTGGGAGTAATATGGGGTGGTGGAAACACAATTATAAT 246
247 TCAGCTCTCATGTCCAGACTGAGCATCAGCAAAGACAATTCCAAGAGCCAAGTTTTCTTA 306
307 AAAATGAACAGTCTGCAAATTGATGACACAGCCATATACTACTGTGCCAAAC 358
359 ----- 375
376 TACTATGCTATGGACTATTGGGGTCAAGGAACCTCAGTCACCGTCTCCTCA 426
```

>gb|M34626|MUSIGHACK Mouse Ig rearranged heavy chain (HC19-F8) mRNA VH-DH-JH4

```
1 CAGGTGCAGCTGAAGGAGTCAGGACCTGGCCTGGTGGCGCCCTCACAGAGCCTGTCCATC 60
61 ACTTGCACTGTCTCTGGGTTTTTCATTAAACCAGCTATGGTGTAGACTGGGTTCCGCCAGCCT 120
121 CCAGGAAAGGGTCTGGAGTGGCTGGGAGTAATATGGGGTGGTGGAAACACAGATTATAAT 180
181 TCAGCTCTCATGTCCAGACTGAGCATCAGCAAAGACAACCTCCAAGAGCCAAGTTTTCTTA 240
241 AAAATGAACAGTCTGCHAACTGATGACACAGCCATGTACTACTGTGCC 288
289 ----- 299
300 ACGGGGNHTTTACTATGCTATGGACTACTGGGGTCAAGGAACCTCAGTCACCGTCTC 356
```

>gb|L31403|MUSIGHCVX Mouse immunoglobulin heavy chain variable region (Igh-V)

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58 CAGGTGCACCTGAAGGAGTCAGGACCTGGCCTGGTGGCGCCCTCACAGAGCCTGTCCATC 117
118 ACTTGCACTGTCTCTGGATTTTCATTAAACCACCTATGGTGTACACTGGTTTTCCGCCAGCCT 177
178 CCAGGAAAGGGTCTGGAGTGGCTGGGACTAATATGGGGTGGTGGAAACACAGATTATAAT 237
238 TCGGCTCTCATGTCCAGACTGAGCATCAACAAAGACAACCTCCAAGAGCCAAGTTTTCTTA 297
298 AAAATGAACAGTCTGCAAGCTGATGACACAGCCATGTACTACTGTGCCAGATT 350
351 ----- 367
368 ACGACTATGCTGTGGACTACTGGGGTCAAGGAACCTCAGTCACCGTCTCCTCA 420
```